TORQ Analysis of First-Line Supervisors/Managers of Mechanics, Installers, and Repairers to Construction Managers

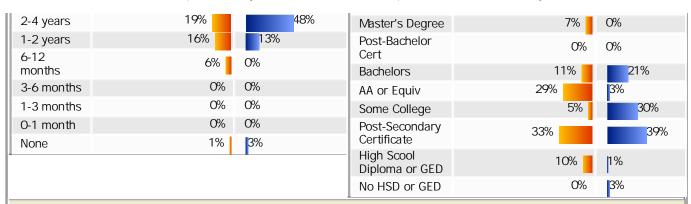
INPUT SECTION:											
Transfer	Title O*NET F				Filters						
From Title:	First-Line Supervisors/Managers of Mechanics, Installers, and Repairers				49-	1011.00	Abilities: Importance W LeveL: 50 1		Veight:		
To Title:	Constru	uction I	Manage	rs		11-	9021.00	Skills:	Importance Level: 69) V	Veight:
Labor Market Area:	Maine S	Statew	ide					Knowledge:	Importance Level: 69) V	Veight:
OUTPUT SECTION:											
Grand TORQ: 87					37						
Ability TORQ				Skills To	ORQ			Knowledge TORQ			
Level			94	Level			83	Level			85
				Upgrade These Skills			Knowledge to Add				
Gaps To	Narrow i	if Possi	ble		Upgrade T	hese Sk	ills	K	nowledge	to Add	
Gaps To Ability	Narrow i	if Possi Gap	ble Impt	Skill	Upgrade T	hese Sk Gap	Impt	Knowledge		to Add Gap	Impt
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Ability Information Ordering Written	Level	Gap	Impt		Level	Gap		Knowledge Building an Constructio Mathematic	Level 78 cs 68	22 18	94 72
Ability Information Ordering	Level 57	Gap 2	Impt 65		Level	Gap		Knowledge Building an Constructio	Level d n 78	Gap 22	94
Ability Information Ordering Written	Level 57	Gap 2	Impt 65		Level	Gap		Knowledge Building an Constructio Mathematic Design English	Level 78 68 66	22 18 11	94 72 72





Experience & Education Comparison						
Related Work Experience Comparison			Required Education Level Comparison			
First-Line Supervisors/Managers Description of Mechanics, Installers, and Repairers First-Line Construction Managers			First-Line Supervisors/Managers Description Of Mechanics, Installers, and Repairers			
10+ years	22%	3%	Doctoral	0%	0%	
8-10 years 6-8 years	8% - 7% -	7% 4%	Professional Degree	O%	0%	
4-6 years	17%	19%	Post-Masters Cert	0%	0%	





First-Line Supervisors/Managers of Mechanics, Installers, and Repairers

Construction Managers

Most Common Educational/Training Requirement

Work experience in a related occupation

Bachelor's degree

Job Zone Comparison

4 - Job Zone Four: Considerable Preparation Needed A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.

Most of these occupations require a four - year bachelor's degree, but some do not.

Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

3 - Job Zone Three: Medium Preparation Needed

Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

<u>Tasks</u>

First-Line Supervisors/Managers of Mechanics,

Core Tasks

Generalized Work Activities:

- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Getting Information Observing, receiving, and otherwise obtaining information from all relevant sources.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Making Decisions and Solving Problems
 Analyzing information and evaluating results to choose the best solution and solve problems.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.

Specific Tasks

Construction Managers

Core Tasks

Generalized Work Activities:

- Making Decisions and Solving Problems -Analyzing information and evaluating results to choose the best solution and solve problems.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Organizing, Planning, and Prioritizing Work - Developing specific goals and plans to prioritize, organize, and accomplish your work.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Scheduling Work and Activities -Scheduling events, programs, and activities, as well as the work of others.

Specific Tasks

Occupation Specific Tasks:



Occupation Specific Tasks:

- Compile operational and personnel records, such as time and production records, inventory data, repair and maintenance statistics, and test results.
- Compute estimates and actual costs of factors such as materials, labor, and outside contractors.
- Conduct or arrange for worker training in safety, repair, and maintenance techniques, operational procedures, or equipment use.
- Confer with personnel, such as management, engineering, quality control, customer, and union workers' representatives, to coordinate work activities, resolve employee grievances, and identify and review resource needs.
- Counsel employees about work-related issues and assist employees to correct job-skill deficiencies.
- Design equipment configurations to meet personnel needs.
- Determine schedules, sequences, and assignments for work activities, based on work priority, quantity of equipment and skill of personnel.
- Develop and implement electronic maintenance programs and computer information management systems.
- Develop, implement, and evaluate maintenance policies and procedures.
- Examine objects, systems, or facilities, and analyze information to determine needed installations, services, or repairs.
- Inspect, test, and measure completed work, using devices such as hand tools and gauges to verify conformance to standards and repair requirements.
- Interpret specifications, blueprints, and job orders to construct templates and lay out reference points for workers.
- Investigate accidents and injuries, and prepare reports of findings.
- Meet with vendors and suppliers to discuss products used in repair work.
- Monitor employees' work levels and review work performance.
- Monitor tool inventories and the condition and maintenance of shops in order to ensure adequate working conditions.
- Participate in budget preparation and administration, coordinating purchasing and documentation, and monitoring departmental expenditures.
- Patrol and monitor work areas and examine tools and equipment in order to detect unsafe conditions or violations of procedures or safety rules.
- Perform skilled repair and maintenance operations, using equipment such as hand and power tools, hydraulic presses and shears, and welding equipment.

- Confer with supervisory personnel, owners, contractors, and design professionals to discuss and resolve matters such as work procedures, complaints, and construction problems.
- Determine labor requirements and dispatch workers to construction sites.
- Develop and implement quality control programs.
- Direct acquisition of land for construction projects.
- Direct and supervise workers.
- Evaluate construction methods and determine cost-effectiveness of plans, using computers.
- Inspect and review projects to monitor compliance with building and safety codes, and other regulations.
- Interpret and explain plans and contract terms to administrative staff, workers, and clients, representing the owner or developer.
- Investigate damage, accidents, or delays at construction sites, to ensure that proper procedures are being carried out.
- · Obtain all necessary permits and licenses.
- Plan, organize, and direct activities concerned with the construction and maintenance of structures, facilities, and systems.
- Prepare and submit budget estimates and progress and cost tracking reports.
- Prepare contracts and negotiate revisions, changes and additions to contractual agreements with architects, consultants, clients, suppliers and subcontractors.
- Requisition supplies and materials to complete construction projects.
- Schedule the project in logical steps and budget time required to meet deadlines.
- Select, contract, and oversee workers who complete specific pieces of the project, such as painting or plumbing.
- Study job specifications to determine appropriate construction methods.
- Take actions to deal with the results of delays, bad weather, or emergencies at construction site.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- assign work to staff or employees
- compile information on findings from investigation of accidents
- compute cost estimates of construction or engineering projects
- compute production, construction, or installation specifications
- confer with management or users



- Recommend or initiate personnel actions, such as hires, promotions, transfers, discharges, and disciplinary measures.
- Requisition materials and supplies, such as tools, equipment, and replacement parts.

Detailed Tasks

Detailed Work Activities:

- · assign work to staff or employees
- conduct or attend staff meetings
- conduct training for personnel
- confer with customer representatives
- confer with engineering, technical or manufacturing personnel
- consult with managerial or supervisory personnel
- coordinate equipment or personnel in mechanical repair setting
- demonstrate or explain assembly or use of equipment
- determine installation, service, or repair needed
- develop budgets
- · develop maintenance schedules
- develop policies, procedures, methods, or standards
- develop staffing plan
- diagnose mechanical problems in machinery or equipment
- direct and coordinate activities of workers or staff
- discipline staff for infractions of rules or regulations
- establish employee performance standards
- estimate cost for repair services
- estimate materials or labor requirements
- evaluate performance of employees or contract personnel
- examine products or work to verify conformance to specifications
- hire, discharge, transfer, or promote workers
- inspect facilities to determine repair or replacement needs
- inspect machinery or equipment to determine adjustments or repairs needed
- modify work procedures or processes to meet deadlines
- monitor operations to verify conformance to standards
- monitor worker performance
- orient new employees
- oversee work progress to verify safety or conformance to standards
- perform safety inspections in manufacturing or industrial setting

- consult with managerial or supervisory personnel
- direct and coordinate activities of workers or staff
- direct and coordinate construction of mine shafts or tunnels
- estimate costs of design materials or construction
- estimate materials or labor requirements
- estimate time or cost for installation, repair, or construction projects
- · evaluate construction quality
- evaluate new construction industry practices
- explain government laws or regulations
- explain rules, policies or regulations
- inspect facilities or equipment for regulatory compliance
- inspect project operations, or site to determine specification compliance
- interpret maps for architecture, construction, or engineering project
- make decisions
- manage building maintenance projects
- · manage contracts
- manage contracts
- · monitor contract performance
- negotiate business contracts
- obtain information from individuals
- order or purchase supplies, materials, or equipment
- oversee execution of organizational or program policies
- perform safety inspections in construction or resource extraction setting
- plan or organize work
- prepare contract documents
- recognize construction industry codes or symbols on blueprints
- · recommend action to ensure compliance
- recommend alterations in construction or specifications
- resolve customer or public complaints
- schedule employee work hours
- set priorities for construction workers
- understand construction specifications
- understand government construction contracting regulations
- use building or land use regulations
- use computers to enter, access or retrieve data
- use knowledge of investigation techniques
- use long or short term production planning techniques
- use negotiation techniques
- use project management techniques



- prepare or maintain employee records
- prepare reports
- read blueprints
- read schematics
- read specifications
- read technical drawings
- read work order, instructions, formulas, or processing charts
- recommend improvements to work methods or procedures
- recommend personnel actions, such as promotions, transfers, and dismissals
- recommend purchase or repair of furnishings or equipment
- requisition stock, materials, supplies or equipment
- resolve or assist workers to resolve work problems
- understand service or repair manuals
- understand technical operating, service or repair manuals

Technology - Examples

Accounting software

• Cost accounting software

Calendar and scheduling software

Scheduling software

Data base user interface and query software

- Database software
- Microsoft Access
- Vehicle management software

Electronic mail software

- Email software
- Microsoft Outlook

Enterprise resource planning ERP software

- Infor SyteLine ERP
- SAP software
- WorkTech MAXIMO

Facilities management software

- Computerized maintenance management system CMVS software
- Maintenance management software

Industrial control software

• Programmable logic controller PLC software

Internet browser software

Internet browser software

• use quality assurance techniques

Technology - Examples

Accounting software

• SRC Cash Flow Forecasting

Analytical or scientific software

ArenaSoft Estimating

Calendar and scheduling software

- AEC Software FastTrack Schedule
- Scheduling software

Charting software

• Microsoft Office Visio

Compliance software

• CSI WSE CodeBuddy

Computer aided design CAD software

Autodesk AutoCAD software

Data base user interface and query software

- Database software
- Integrated construction management software
- Microsoft Access

Document management software

- Axios Systems assyst
- Daily Manager
- Site Manager

Electronic mail software

• Email software

Human resources software

• Profitool software (human resources feature)

Internet browser software

- Internet browser software
- Microsoft Internet Explorer

Inventory management software

Profitool GearWatch

Office suite software

Microsoft Office

Presentation software

- Microsoft PowerPoint
- Presentation software

Project management software

First-Line Supervisors/Managers of Mechanics, Ins
Microsoft Internet Explorer
Inventory management software
Automated inventory software
Inventory management software
Office suite software
Microsoft Office
Project management software
Recordkeeping software
Spreadsheet software
Microsoft Excel
Spreadsheet software
Time accounting software
Payroll software
Word processing software
Microsoft Word
Word processing software
Tools - Examples
Desktop computers
Laser printers
Mainframe computers
Programmable logic controllers PLC
Personal computers

• Two way radios

ers, and Repairers Construction Managers
Cadsoft Design/Build
CBS ProLog Manager
Explorer Engineer
Intuit QuickBase
ISS Construction Manager
Jobber Computer Plus
Microsoft Project
Primavera Systems Expedition
Primavera Systems software
Primavera Systems SureTrak Project Manager
Sage Software Sage Master Builder
Sage Timberline Office software
• TERM NALFOUR Site Manager
UDA Construction Office Construction Management
Versa-Calc Jobber 6 Construction Calculator
Virtual Boss software

Spreadsheet software

• Microsoft Excel

Time accounting software

Web page creation and editing software

• Profitool software (time accounting feature)

• IMPACT software

Word processing software

• Microsoft Word

Tools - Examples

- Laptop computers
- Personal computers
- Pocket personal computers PC
- Large-format scanners

Labor Market Comparison						
Description	First-Line Supervisors/Managers of Mechanics, Installers, and Repairers	Construction Managers	Difference			
Median Wage	\$ 46,810	\$ 72,320	\$ 25,510			



10th Percentile Wage	\$ 29,560	\$ 39,770	\$ 10,210
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 59,530	\$ 93,040	\$ 33,510
90th Percentile Wage	\$ 74,550	\$122,070	\$ 47,520
Mean Wage	\$ 49,310	\$ 75,600	\$ 26,290
Total Employment - 2007	2,490	970	-1,520
Employment Base - 2006	2,530	1,825	-705
Projected Employment - 2016	2,535	1,892	-643
Projected Job Growth - 2006-2016	0.2 %	3.7 %	3.5 %
Projected Annual Openings - 2006-2016	60	35	-25

National Job Posting Trends

Trend for First-Line Supervisors/Managers of Mechanics, Installers, and Repairers

Trend for Construction Managers

Job Trends from Indeed.com



Data from Indeed

Recommended Programs

Construction Engineering Technology/Technician

Construction Engineering Technology/Technician. A program that prepares individuals to apply basic engineering principles and technical skills in support of engineers, engineering contractors and other professionals engaged in the construction of buildings and related structures. Includes instruction in basic structural engineering principles and construction techniques, building site inspection, site supervision, construction personnel supervision, plan and specification interpretation, supply logistics and procurement, applicable building codes, and report preparation.

Institution	Address	City	URL
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Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu

Construction/Building Inspector

Building/Home/Construction Inspection/Inspector. A program that prepares individuals to apply industrial, labor, and governmental standards and laws to the oversight of construction projects and the maintenance of completed buildings and other structures. Includes instruction in construction processes and techniques, materials analysis, occupational safety and health, industry standards, building codes and specifications, blueprint interpretation, testing equipment and procedures, communication skills, accident investigation, and documentation.

No schools available for the program

Construction and Building Finishers and Managers,

Building/Construction Finishing, Management, and Inspection, Other. Any instructional program in building/construction finishing, management, and inspection not listed above.

No schools available for the program

Construction Trades, Other

Construction Trades, Other. Any instructional program in construction trades not listed above.

No schools available for the program

Business/Commerce, General

Business/Commerce, General. A program that focuses on the general study of business, including the processes of interchanging goods and services (buying, selling and producing), business organization, and accounting as used in profit-making and nonprofit public and private institutions and agencies. The programs may prepare individuals to apply business principles and techniques in various occupational settings.

Institution	Address	City	URL
Beal College	99 Farm Road	Bangor	<u>bealcollege.edu</u>
University of Maine at Farmington	224 Main St	Farmington	www.umf.maine.edu
University of Maine at Fort Kent	23 University Drive	Fort Kent	www.umfk.maine.edu
University of Maine at Presque Isle	181 Main St	Presque Isle	www.umpi.maine.edu
University of Maine at Presque Isle	181 Main St	Presque Isle	www.umpi.maine.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu

Business Administration and Management, General

Business Administration and Management, General. A program that generally prepares individuals to plan, organize, direct, and control the functions and processes of a firm or organization. Includes instruction in management theory, human resources management and behavior, accounting and other quantitative methods, purchasing and logistics, organization and production, marketing, and business decision-making.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu
University of Maine at Augusta	46 University Dr	Augusta	www.uma.maine.edu/
University of Maine at Augusta	46 University Dr	Augusta	www.uma.maine.edu/
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu



Husson College	One College Circle	Bangor	www.husson.edu
Husson College	One College Circle	Bangor	www.husson.edu
Husson College	One College Circle	Bangor	www.husson.edu
Beal College	99 Farm Road	Bangor	bealcollege.edu
University of New England	11 Hills Beach Rd	Biddeford	<u>WWW.UNE.EDU</u>
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu
University of Maine at Machias	9 O'Brien Ave	Machias	www.umm.maine.edu
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.edu/
Andover College	901 Washington Ave	Portland	WWW.ANDOVERCOLLEGE.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Southern Maine Community College	2 Fort Road	South Portland	www.smccME.edu
Southern Maine Community College	2 Fort Road	South Portland	www.smccME.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu
York County Community College	112 College Drive	Wells	www.yccc.edu

Operations Management and Supervision

Operations Management and Supervision. A program that prepares individuals to manage and direct the physical and/or technical functions of a firm or organization, particularly those relating to development, production, and manufacturing. Includes instruction in principles of general management, manufacturing and production systems, plant management, equipment maintenance management, production control, industrial labor relations and skilled trades supervision, strategic manufacturing policy, systems analysis, productivity analysis and cost control, and materials planning.

No schools available for the program

Maine Statewide Promotion Opportunities for First-Line Supervisors/Managers of Mechanics,

O*NET Title Grand Job Employment Median Difference Growth Job Code TORQ Zone Employment Wage Difference Growth Job Openings

49-1011.00	First-Line Supervisors/Managers of Mechanics, Installers, and Repairers	100	4	2,490	\$46,810.00	\$0.00	0%	60
11-9021.00	Construction Managers	87	3	970	\$72,320.00	\$25,510.00	4%	35
11-3051.00	Industrial Production Managers	86	4	690	\$72,560.00	\$25,750.00	-12%	24
17-3026.00	Industrial Engineering Technicians	84	3	370	\$51,700.00	\$4,890.00	6%	9
11-3071.02	Storage and Distribution Managers	84	3	710	\$62,270.00	\$15,460.00	5%	25
49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	83	5	20	\$60,790.00	\$13,980.00	5%	1
49-9051.00	Electrical Power-Line Installers and Repairers	83	3	280	\$47,750.00	\$940.00	9%	12
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	83	3	170	\$47,860.00	\$1,050.00	-9%	3
27-1021.00	Commercial and Industrial Designers	82	4	140	\$49,170.00	\$2,360.00	5%	5
47-4021.00	Elevator Installers and Repairers	82	4	0	\$50, 960.00	\$4,150.00	0%	0
51-8013.00	Power Plant Operators	81	3	480	\$50, 240.00	\$3,430.00	10%	21
11-3071.01	Transportation Managers	81	3	710	\$62,270.00	\$15,460.00	5%	25
11-9011.01	Nursery and Greenhouse Managers	81	4	30	\$60,610.00	\$13,800.00	20%	15
49-2094.00	Electrical and Electronics Repairers, Commercial and Industrial Equipment	81	3	440	\$49,450.00	\$2,640.00	-19%	15
49-9052.00	Telecommunications Line Installers and Repairers	81	3	720	\$56,120.00	\$9,310.00	0%	19

Top Industries for Construction Managers								
Industry	NAICS	% in Industry	Employment	Projected Employment	% Change			
Self-employed workers, primary job	000601	53.17%	258, 957	300,164	15.91%			



Nonresidential building construction	236200	9.46%	46,095	61,803	34.08%
-					
Residential building construction	236100	8.57%	41,733	46, 995	12.61%
Self-employed workers, secondary job	000602	3.13%	15, 230	15,162	-0.45%
Electrical contractors	238210	2.59%	12,606	13,218	4.86%
Plumbing, heating, and air-conditioning contractors	238220	2.48%	12,099	13,663	12.93%
Other specialty trade contractors	238900	2.41%	11,743	12,979	10.52%
Highway, street, and bridge construction	237300	1.63%	7,928	8,536	7.66%
Local government, excluding education and hospitals	939300	1.50%	7, 291	8,191	12.34%
Land subdivision	237200	0.89%	4,323	4,317	-0.15%
Drywall and insulation contractors	238310	0.79%	3,825	4,080	6.66%
Poured concrete foundation and structure contractors	238110	0.70%	3, 430	3,866	12.73%
Roofing contractors	238160	0.57%	2,797	3,267	16.77%
Masonry contractors	238140	0.56%	2,724	3,017	10.78%
Power and communication line and related structures construction	237130	0.56%	2,732	2,874	5. 20%

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Automobile dealers	441100	6.95%	32, 287	36,627	13.44%
Automotive mechanical and electrical repair and maintenance	811110	5. 50%	25, 547	30, 332	18.73%
Local government, excluding education and hospitals	939300	5. 31%	24,681	27,727	12.34%
Plumbing, heating, and air-conditioning contractors	238220	3.15%	14,658	16,552	12.93%
Automotive parts, accessories, and tire stores	441300	2.86%	13, 294	12,969	-2.44%
Automotive body, paint, interior, and glass repair	811120	2.85%	13, 264	15, 487	16.76%
Electric power generation, transmission and distribution	221100	2.79%	12,970	11,929	-8.03%
Federal government, excluding postal service	919999	2.45%	11,388	10,766	-5.47%
Wired telecommunications carriers	517100	2.42%	11,241	8,825	-21.49%
Lessors of real estate	531100	2.27%	10,546	11,619	10.18%
Electrical contractors	238210	1.83%	8,518	8, 931	4.86%
State government, excluding education and hospitals	929200	1.66%	7,712	7,568	-1.87%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	1.46%	6,774	7,168	5.82%

First-Line Supervisors/Managers of Mechanics, Installers, and Repairers Construction Managers

	Elementary and secondary schools, public and private	611100	1.43%	6, 655	7,013	5. 38%	
ı	Activities related to real estate	531300	1.41%	6,543	8, 339	27.44%	